

Amendments to the Specification:

Please replace paragraph 45 beginning at page 10, line 24, with the following amended paragraph:

[0045] As shown in Figure 1, the front plate 60 is adapted for fuel cell peripherals to mount on it, such as two humidifiers 110, 120 and three heat exchangers 111, 112 and 113. Therefore, in this embodiment, fuel cell stack 10 and fuel cell peripherals are mounted on opposite sides of the manifold assembly 70. It should be understood that the manifold plate can be adapted for mounting peripherals and the fuel cell stack on a same side thereof. The detailed structure of the front plate 60 is shown in Figure 2a and 2b. The front plate 60 is provided with a plurality of ports 61. In this embodiment, the ports are in the form of through holes 61a to 61s, which penetrate the front plate 60 in the direction of thickness. In practice the number and arrangement of the ports 61 can be varied as needed. For illustration purposes, in Figure 2a and 2b, eighteen through holes 61a to 61s (with references 61l and 61o not being used for clarity) and 61a', 61b' are shown, with those adapted to connect to one peripheral being indicated with a rectangle in dotted lines. Some of the fuel cell peripherals, as shown in this embodiment, are the humidifiers 110, 120 and the heat exchangers 111, 112 and 113, and these are mounted on the front plate 60 so that fluids, gases or other media can be exchanged between the fuel cell stack 10 and the peripherals via internal passages of the manifold assembly 70 as will be described in detail below; the humidifier 110 provides a first or fuel gas humidifier and the humidifier 120 provides a second or oxidant humidifier. In this embodiment, through holes 61a, 61b, 61a' and 61b' are used to connect to the a first heat exchanger 113, through holes 61c to 61f are used to connect to a first humidifier 110, through holes in 61g, 61h, 61j and 61k are used to connect to a second heat exchanger 111, through holes 61m and 61n are used to connect to the third heat exchanger 112, and the through holes 61p to 61s are used to connect to a second humidifier 120. As required, conventional sealing and clamping

devices, such as O-rings are provided around the through holes to prevent leakage. Although in Figure 2a and 2b, the through holes are shown in a particular alignment arrangement, the actual arrangement may be different considering other factors in the situation, such as the size of the fuel cell peripherals or the alignment with ports in the middle plate 40. The arrangement of the through holes can be varied, as is required for a particular situation.

Please replace paragraph 46 beginning at page 11, line 23, with the following amended paragraph:

[0046] Referring to Figures 3a to 3d, the middle plate 40 has a plurality of ports and fluid passages provided. The fluid passages can be formed by etching or milling while the ports can be formed by boring or drilling. For simplicity, in Figure 1 and Figures 3A-3D, not all the fluid passages are shown. In general only fluid passages associated with ports visible in the plane of each figure are indicated. Additionally, fluid passages are indicated in two different ways: fluid passages that are internal or below the plane of each figure indicated by dotted lines; fluid passages that are formed as open channels in one of the front and back surfaces of the middle plate 40 are indicated by solid lines, and these channels are then closed by one of the front and back plates 20, 60. Thus, the various fluid passages extend transversely to connect ports that are offset from one another. Alternatively, the various plates 20, 40, and 60 can be formed by molding or casting. As shown in Figure 1, a complete coolant loop is shown. Coolant is supplied from a coolant source and enters the middle plate 40 through a port 41a provided on the side surface of the middle plate 40, and providing a coolant inlet of the manifold assembly 70. Then the coolant flows along a fluid passage 411 inside the middle plate 40 to a port 41b. As can be best seen in Figure 3b, the port 41b is a port provided on the surface of the middle plate 40 facing the back plate 20 that communicates with the fluid passages 411 and 412. The fluid passage 412 is provided as an open channel on the surface of the middle plate 40 facing the back plate 20. Therefore, the coolant flows from the port 41b along the fluid passage 412 to the port

41c, which is in alignment with the port 22 of the back plate 20. The ports 41b,c are simply end portions of the passage 412 that align with the ports in the back plate 20. These passages 411, 412 provide a coolant inlet path. The coolant flows through the port 22 and coolant inlet 16 into the fuel cell stack 10. Then the coolant leaves the fuel cell stack 10 through the coolant outlet 13 after flowing through the internal coolant passages of the stack. The coolant flows through the port 25 of the back plate 20, which is in alignment with the coolant outlet 13 and a port 42a provided on the surface of the middle plate 40 facing the back plate 20. Then the coolant continues to flow into the fluid passage 421 through the port 42a to a port 42b provided on the surface of the middle plate 40 facing the front plate 60. Port 42a and fluid passage 421 can be seen in Figure 1. From port 42b, the coolant flows along two separated fluid passages 422 and 423. The two fluid passages 422 and 423 are provided as open channels on the surface of middle plate 40, and these two streams of coolant will be described separately.